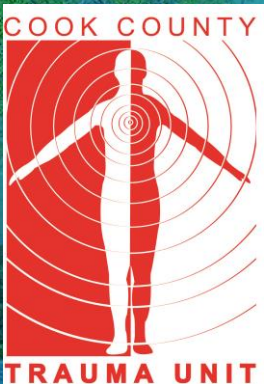


Dept of Trauma/Burn Surgery/PM&R 2018 Year in Review

Dr. Faran Bokhari, Chairperson

March 22, 2019



COOK COUNTY
HEALTH

Divisions and Sections

Department Chairperson

Trauma Surgery Admin

Pre-Hospital and Resuscitation

Burn Surgery

Surgical Critical Care Units (Trauma and Burn)

Research

Quality

Prevention

Rehabilitation

Dr. Faran Bokhari

Dr. Frederic Starr

Dr. Andrew Dennis

Dr. Stathis Poulakidas

Dr. Thomas Messer

Dr. Leah Tatebe

Dr. Caroline Butler

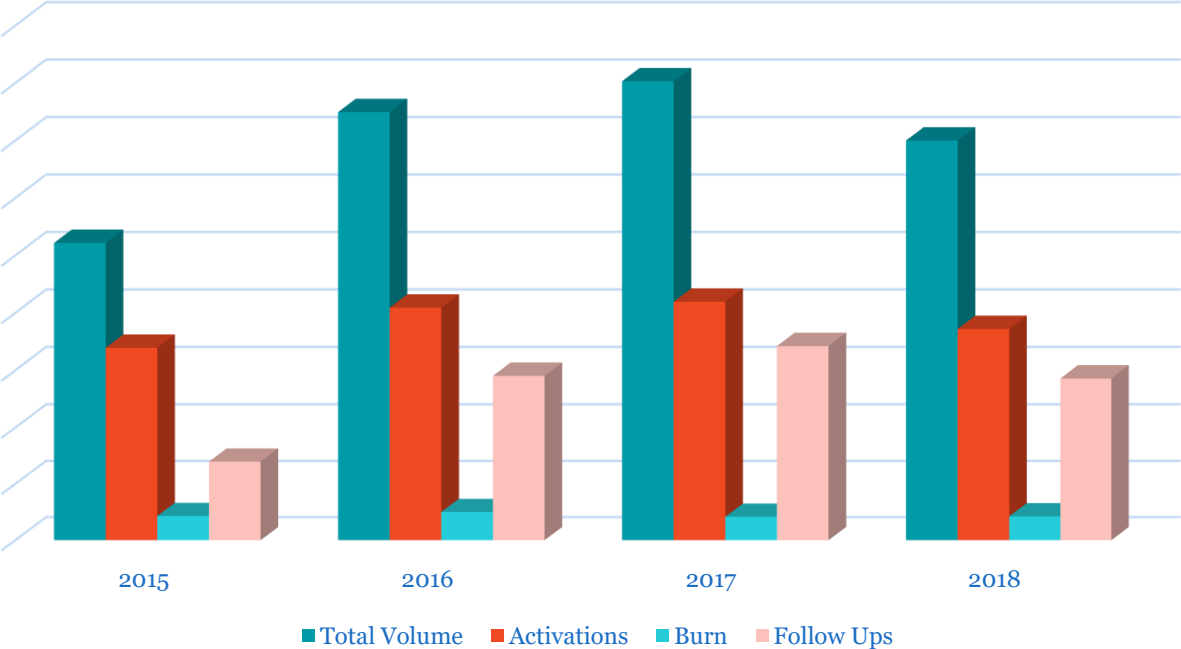
Rev. Carol Reese

Dr. Tess McCarthy

Initiatives 2018

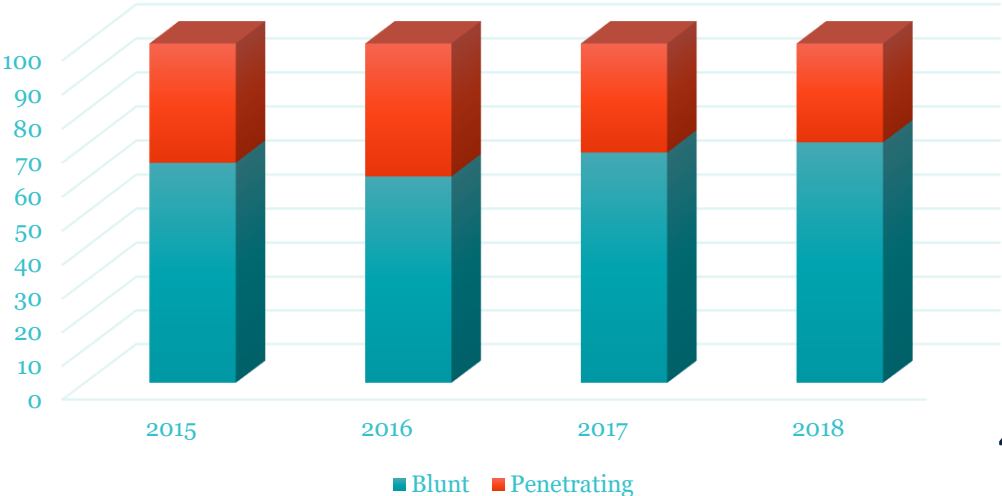
- Quality and benchmarking
- IDPH level 1 verification-achieved 2017-2021
- American Burn Association verification-achieved 2017-2020
- American College of Surgeons level 1 verification-target 2019-2020-in process
- Research-expansion and alignment with QA
- Hiring completed

Trauma Services: Volume & Method of Injury



There were 60% more trauma activations in 2015 compared to 2014

Mechanism of Injury



Parameters Tracked

- | | | |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Acute Kidney Injury | <input type="checkbox"/> Osteomyelitis | |
| <input type="checkbox"/> Acute Respiratory Distress Syndrome (ARDS) | <input type="checkbox"/> Unplanned Return to the OR | |
| <input type="checkbox"/> Cardiac Arrest with CPR | <input type="checkbox"/> Unplanned Admission to the ICU | |
| <input type="checkbox"/> Decubitus Ulcer | <input type="checkbox"/> Severe Sepsis | |
| <input type="checkbox"/> Deep Surgical Site Infection | <input type="checkbox"/> Other | |
| <input type="checkbox"/> Drug or Alcohol Withdrawal Syndrome | <input type="checkbox"/> Abdominal Compartment Syndrome (Retired 2011) | |
| <input type="checkbox"/> Deep Vein Thrombosis (DVT) | <input type="checkbox"/> Abdominal Fascia Left Open (Retired 2011) | |
| <input type="checkbox"/> Extremity Compartment Syndrome | <input type="checkbox"/> Base Deficit (Retired 2011) | |
| <input type="checkbox"/> Graft/prosthesis/flap failure (Retired 2016) | <input type="checkbox"/> Bleeding (Retired 2011) | |
| <input type="checkbox"/> Myocardial Infarction | <input type="checkbox"/> Coagulopathy (Retired 2011) | |
| <input type="checkbox"/> Organ / Space Surgical Site Infection | <input type="checkbox"/> Coma (Retired 2011) | |
| <input type="checkbox"/> Pneumonia (Retired 2016) | <input type="checkbox"/> Intracranial Pressure (Retired 2011) | |
| <input type="checkbox"/> Pulmonary Embolism | <input type="checkbox"/> Systemic Sepsis (Retired 2011) | |
| <input type="checkbox"/> Stroke / CVA | <input type="checkbox"/> Wound Disruption (Retired 2011) | |
| <input type="checkbox"/> Superficial Surgical Site Infection | <input type="checkbox"/> Catheter Associated Urinary Tract Infection (CAUTI) | <input type="checkbox"/> Absence of Hourly Vitals |
| <input type="checkbox"/> Unplanned Intubation | <input type="checkbox"/> Central Line Associated Bloodstream Infection (CLABSI) | <input type="checkbox"/> SDH/EDH with Craniotomy > 4 hrs after Arrival |
| <input type="checkbox"/> Urinary Tract Infection (Retired 2016) | <input type="checkbox"/> Ventilator Associated Pneumonia (VAP) | <input type="checkbox"/> Comatose Patient Left ED before Definitive Airway Established |
| <input type="checkbox"/> Catheter-Related Blood Stream Infection (Retired 2016) | | <input type="checkbox"/> Reintubation within 48 hrs of Extubation |
| | | <input type="checkbox"/> Abdominal Injuries and Hypotension without a Laparotomy within 1 hr of Arrival |
| | | <input type="checkbox"/> Laparotomy > 4 hrs after Arrival |
| | | <input type="checkbox"/> Nonfixation of Femoral Diaphyseal Fracture |
| | | <input type="checkbox"/> GSW to Abdomen Managed Non-operatively |
| | | <input type="checkbox"/> Initiation of Debridement of Open Tibial Fx > 8 hrs after Arrival |
| | | <input type="checkbox"/> Abdominal, Thoracic, Vascular, or Cranial Surgery > 24 hrs after Arrival |
| | | <input type="checkbox"/> HIV Positive |

| Year | 2018 |
|----------------|------|
| Total | 100 |
| Trauma Act. | 53% |
| Cat. 1 | 1/3 |
| Cat. 2 | 2/3 |
| Blunt | 70% |
| Penetrating | 30% |
| Other | 11% |
| DOA | 1% |
| DIE | 1% |
| Death in House | 1% |
| Encounters | 47% |
| Txr In | 27% |
| Txr Out | 0.1% |
| T & R | 45% |
| Admitted | 55% |

Trauma Metrics

Non SVC Admits

3 – Inapprop 22– OK 1% of admits

Transfer Out

1-IR 2-ECCMO 4-Family Request

Under/Over Triage

3 – Over 2 – Under

Time To CT (for Head Injury with GCS<13 or significant mechanism)

Avg:58 mins (n:187)

NFS Compliance

Classification –84%

Activation Time –75%

Pre-hospital Activation –81%

Patient Arrival –98%

Trauma Present –93%

Time to OR (for emergent trauma cases)

71 mins (n:145)

Emergent Airways

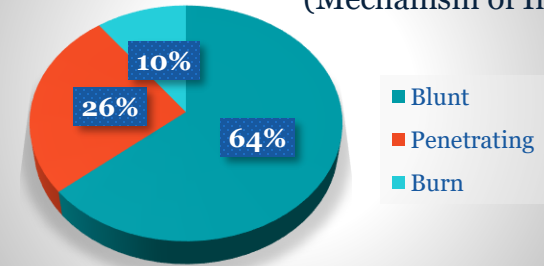
94-airways 8-crichs (7%),
2-anesthesia, 1 –esophageal

Open Fracture to ABX

49 Average 34 Median

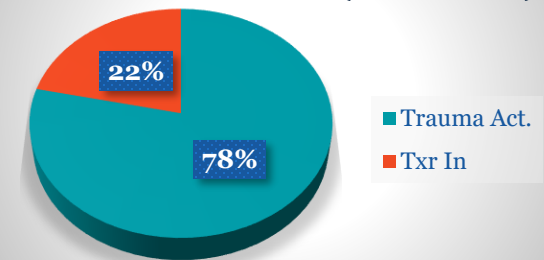
MOI

(Mechanism of Injury)

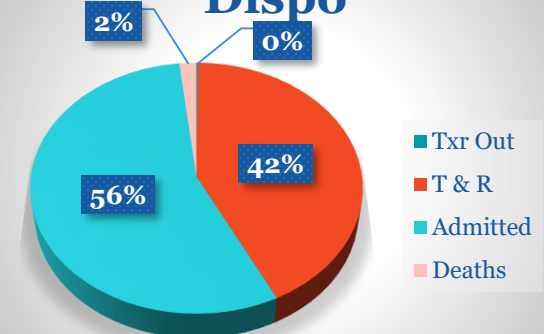


TXR IN

(Transfers In)



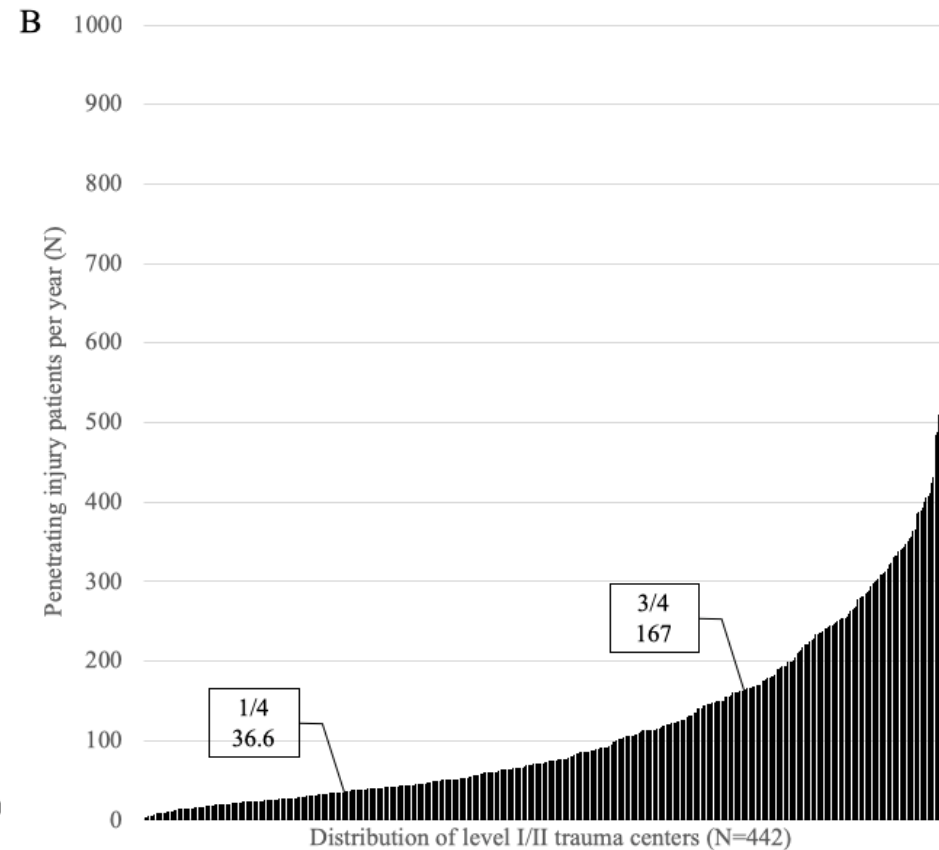
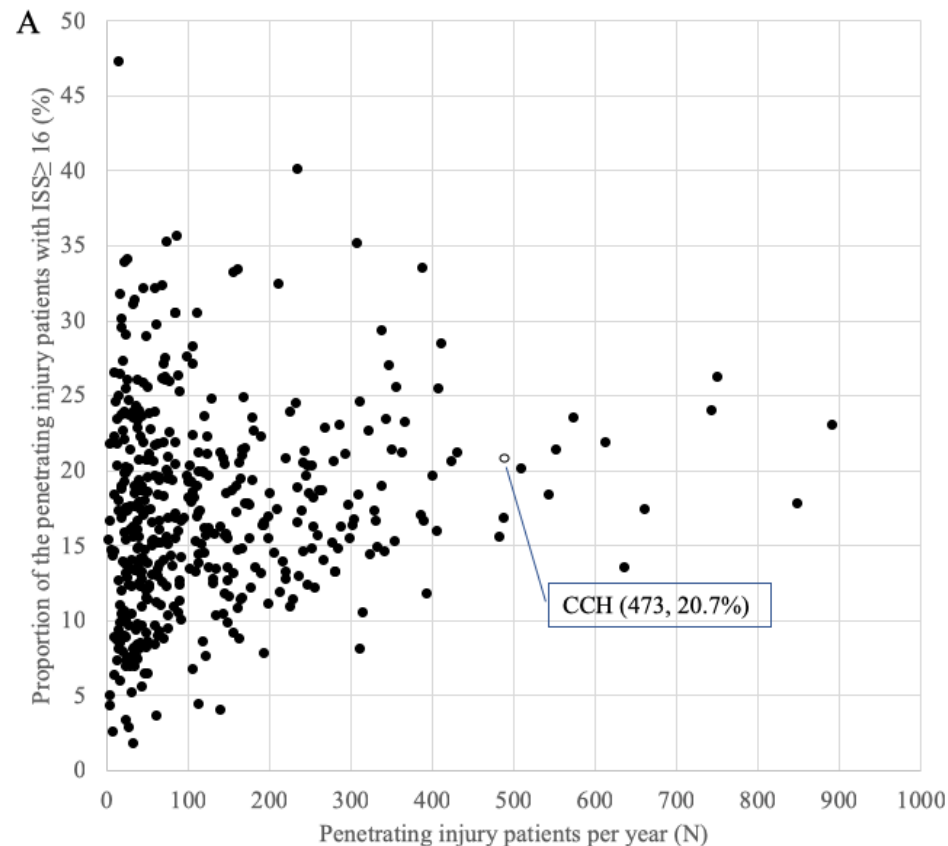
Dispo



Journal of Trauma and Acute Care Surgery

Right Hospital, Right Patients: Penetrating Injury Patients Centralized to High-Volume Penetrating Trauma Centers Have Lower Mortality

Accepted March 2019 Journal Of Trauma



Journal of Trauma and Acute Care Surgery

Right Hospital, Right Patients: Penetrating Injury Patients Centralized to High-Volume Penetrating Trauma Centers Have Lower Mortality

- CCH compared to 448 national trauma centers
- Significantly more severely injured patients than National Trauma Databank
- Survival top 7.7% for severely injured patients

Journal of Trauma and Acute Care Surgery

Right Hospital, Right Patients: Penetrating Injury Patients Centralized to High-Volume Penetrating Trauma Centers Have Lower Mortality

Table 1. Comparisons between NTDB (level I/II trauma centers) and CCH

| | NTDB (N=587,183/year) | CCH (N=1,597/year) | <i>p</i> -value [#] |
|----------------------------------------------------|--------------------------|-----------------------|------------------------------|
| General demographics | | | |
| Mechanism | | | <0.001 |
| Penetrating (N, %) | 55,696 (9.5%) | 473 (29.6%) | |
| Non-penetrating (N, %) | 531,487 (90.5%) | 1,124 (70.4%) | |
| Overall mortality (N, %) | 16476 (2.8%) | 36 (2.3%) | <0.001 |
| Penetrating injuries | | | |
| Mortality (N, %) | 2,226 (4.0%) | 17 (3.6%) | <0.001 |
| Severe penetrating injuries (ISS≥16) (N, %) | 10,187 (18.3%) | 98 (20.7%) | <0.001 |
| Mortality of severe penetrating injuries (N, %) | 2,015 (19.8%) | 7 (7.4%) | <0.001 |

Chi-square test



Burn Services

2018

- Same Metrics As Trauma
- Graft Failure Rate <1% (10% Threshold)
- F/U Rate Of Admitted Patients: 75% (Meets Threshold)
- Total Burns 2018: 1200; Wounds 300

Rehabilitation Services

3 Locations: Stroger/Oak Forest/Provident

15% Increase Over 2017- Numbers and Billings

Total Evaluations:/Interventions:

Inpatient 27k/ Outpatient 32k = 59k

8 Occupational Therapists

20 Physical Therapists

3 Speech Language Pathologists

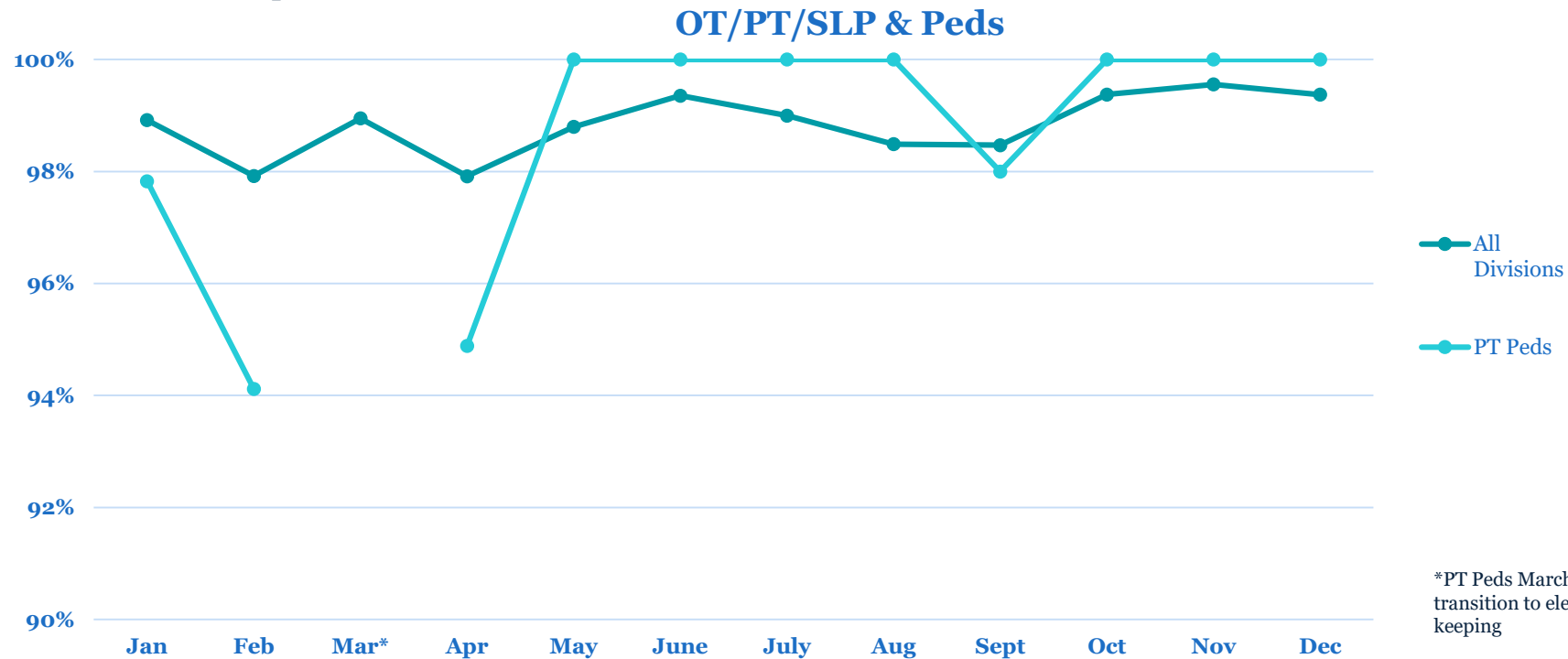
More Evaluations Per Therapist Than Industry Standard

Rehabilitation Services

Quality Metrics

1. Timeliness of Inpatient Evaluations
2. Patient Satisfaction with Outpatient Services
3. Billing/G-Code Compliance
4. Pain Management Compliance

Timeliness of Inpatient Evaluations



Purpose

- 95% of all OT/PT/LSH inpatients seen within 24 hours of physician referral to provide timely and effective patient care.

Items Measured

- Days of the week
- # of student interns
- # of total FTEs for each discipline
- Est. treatment capacity per FTE
- # of evaluations waiting at start
- # of new evaluation orders received after day began
- # of IPs discharged before evaluation completed

Analysis

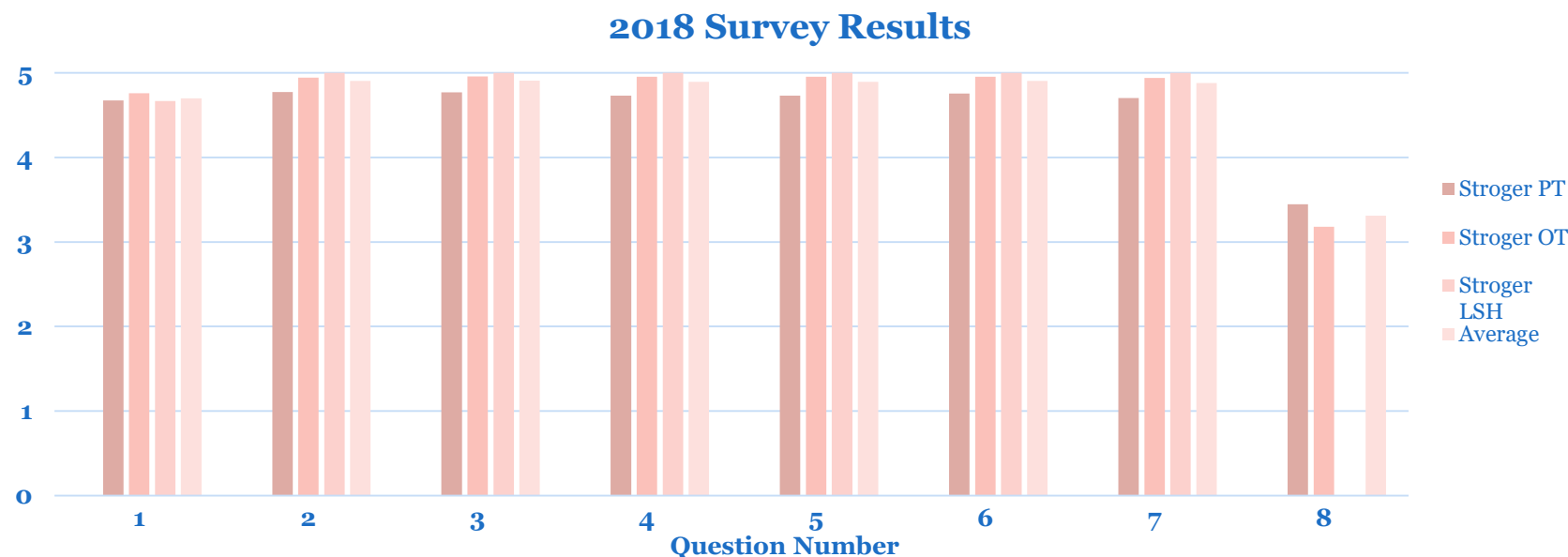
- Department has met 98% compliance this quarter (except for PT Pediatrics in Feb, Mar & Apr).

Action

- Implemented training and assignment of additional pediatric staff



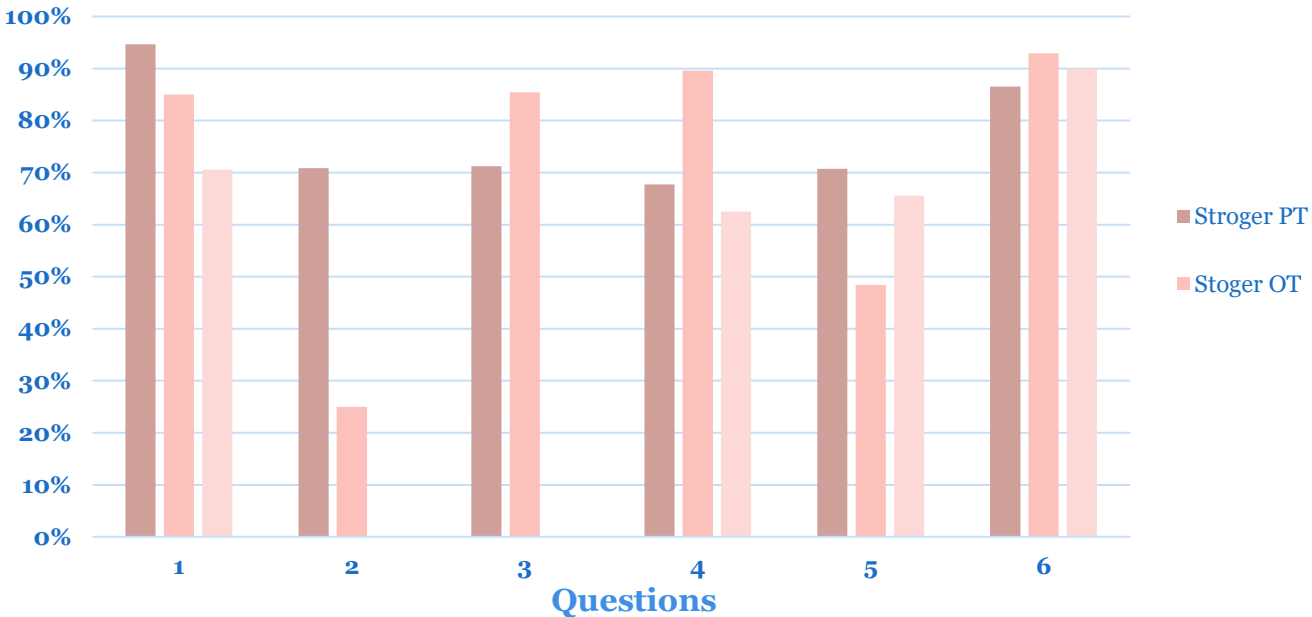
Outpatient Satisfaction Survey Results – OT/PT/LSH



| Purpose /Goal | Items Measured | Analysis | Action |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">• Ensure that patients are satisfied with encounters with OP OT/PT/LSH staff.• Average patient rating 4 or greater on 6 out of 8 items measured | <p>Q1: The front desk is helpful</p> <p>Q2: Therapist explains the treatment received</p> <p>Q3: Therapist treats me with respect</p> <p>Q4: Therapist listens to my concerns</p> <p>Q5: Therapist answers my questions</p> <p>Q6: Therapist explains my home program</p> <p>Q7: I would return to this clinic for future therapy services</p> <p>Q8: I found the group class helpful (PT service only)</p> | <ul style="list-style-type: none">• Department is at compliance• Limited data for LSH due to staffing shortages and reduced outpatient visits | <ul style="list-style-type: none">• Continue to emphasize the patient experience with staff.• Implement measures to improve survey response rate |

G-Code/Billing Compliance – OT/PT/LSH

G-Code/Billing Compliance 2018



Purpose /Goal

- Ensure that IP and OP OT/PT/LSH staff document appropriately to meet regulatory and reimbursement.
- 90% or greater on all items measured

Items Measured

1. G-Code included on evaluation
2. G-Code included on 10th visit, when applicable (N/A for LSH ever)
3. Code included on re-evaluation
4. G-Code included on discharge
5. G-Code improvement noted with Rx
6. Power Bill with Correct G-Codes

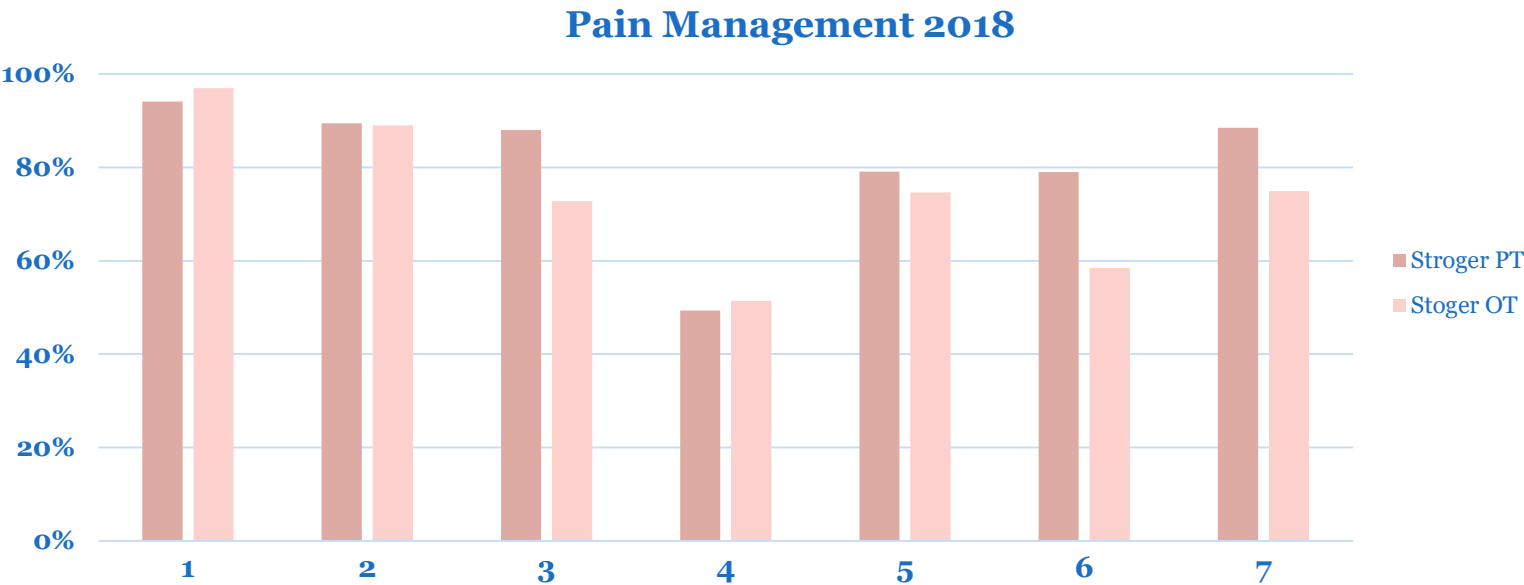
Analysis

- Department has not consistently met benchmark
- Certain services have limited follow up visits so item doesn't apply.
- Few patients have 10 visits. Therefore, a miss has a disproportional effect

Action

- Implemented training for newly assigned staff

Pain Management – OT/PT/LSH



Purpose /Goal

- Ensure that IP and OP OT/PT staff document monitor and manage pain.
- 90% or greater on all items measured

Items Measured

1. Pain score on initial eval
2. Pain Score on Follow-ups
3. Location factors noted
4. Duration factors noted
5. Influencing factors noted
6. Home exercise program developed
7. Pain levels decreased or were the same at discharge

Analysis

- Department did not meet benchmark
- Some items non-applicable to certain services

Action

- Implemented training for newly assigned staff

Research & Presentations

- (FB) **Bokhari F**, Fu CY, Bajani F. (2018) The Lethal Effect of Obesity on Trauma Laparotomy. Annual Meeting of Western Surgical Association, San Jose del Cabo, Mexico. Nov 3-6 2018
- (FB) **Bokhari F**, Bajani F, Fu CY. (2018) Risk Factors of Complications and Mortality in Truncal Burn Patients: Timing to Skin Grafting for Truncal Burn Patients. Annual Meeting of Midwest Region Burn Conference, Minneapolis, MN. Oct 10-13, 2018
- (FB) **Bokhari F**, Fu CY, Bajani F. (2018) To Achieve Level-I Status or not? That is the question. A comparative analysis of Level-I center performance in the US. Scientific Assembly of American College of Emergency Physicians (ACEP), San Diego, CA. Oct 1-4, 2018
- (FB) **Bokhari F**. Fu CY. (2018) Right Hospital, Right Patients: Penetrating Trauma Patients Centralized to High Volume Penetrating Trauma Centers Have Lower Mortality. Poster presentation at the Annual Meeting of American Public Health Association (APHA), San Diego, CA. Nov 10-14, 2018
- (FB) **Bokhari F**. Fu CY. (2018) Obesity as a New Trauma Triage Criterion: Reduced Complication Rates at LEVEL-I Trauma Centers. Poster presentation at the Annual Meeting of American Public Health Association (APHA), San Diego, CA. Nov 10-14, 2018
- (FB) **Bokhari F**. Fu CY. Bajani, F. (2018) Morbid Obesity is Protective in Blunt Abdominal Trauma. Clinical Congress of American College of Surgeons (ACS), Boston, MA. MA Oct 21-25, 2018
- (FB) **Bokhari F**. Fu CY. (2018) Geriatric Abdominal Trauma Patients: A Nationwide Analysis of Complicated Cases. 31st Panamerican Congress of Trauma, Cartagena, Colombia. Aug 14-17, 2018
- (FB) **Bokhari F**. Bajani, F. Fu CY. (2018) The Role of Respiratory Comorbidities in the Management of Facial Burn Patients. Midwest Region Burn Conference, Minneapolis, MI. Oct 10-13, 2018

Research & Presentations

- (T) Kramer KZ, Poulakidas SJ, **Bokhari F.** (2018) Use of Etherified, Regenerated Cellulose Hemostatic Agent on the Donor Site of a Pediatric Burn Patient Requiring Split-Thickness Skin Grafting. Midwest Region Burn Conference, Minneapolis, MN. Oct 10-13, 2018
- (T) Xu T, Kramer KZ, Koeck E, Poulakidas SJ, **Bokhari F.** (2018) Minimizing Intraoperative Hemorrhage in Wound Debridement using a Topical Collagen-Based Hemostatic Agent. Midwest Region Burn Conference, Minneapolis, MN. Oct 10-13, 2018
- (T) Xu T, Kramer KZ, Koeck E, Poulakidas SJ, **Bokhari F.** (2018) Topical Collagen Matrix Aids in the Healing of Burn Wounds. Poster presentation at Midwest Region Burn Conference, Minneapolis, MN. Oct10-13, 2018
- (T) Kramer KZ, Kingsley S, Boron JG, **Bokhari F.** (2018) An Assessment of the 2012 Trauma Triage Recommendations. Poster presentation at the American College of Surgeons, Boston, MA. Oct 21-25, 2018
- (T) Kramer K, Fu CY, Bajani F, Boron J, Kaminsky M, Schlanser V, Starr F, Poulakidas S, Messer T, Koeck E, Dennis A, Hollister H, Luftman K, **Bokhari, F.** (2018) Management of Blunt Hollow Viscus Injury: An Urgent but not Emergent Surgical Disease. Trauma Association of Canada Toronto, Canada. Feb 22-23, 2018
- (T) Koeck E, Schlanser V, Bajani F, Mis J, Fu CY, Kramer K, Luftman K, Hollister H, Poulakidas S, Boron J, Messer T, Kaminsky M, Dennis A, Starr F, **Bokhari F.** (2018) Base Deficit Does Not Predict Mortality in Penetrating Trauma Patients Who Receive Massive Transfusion Protocol. Trauma Association of Canada, Toronto, Canada. Feb 22-23 2018
- (T) Schlanser V, Koeck E, Fu CY, Bajani F, Boron J, Dennis A, Kaminsky M, Kramer K, Poulakidas S, Starr F, **Bokhari F.** (2018) **Base Deficit in Penetrating Trauma Does Not Always Predict Blood Products Transfused in MTP Protocols.** Poster presentation at the Trauma Association of Canada (TAC), Toronto, Canada. Feb 22-23 2018

Initiatives 2019

- American College of Surgeons certification
- QA benchmarking with national bodies-trauma/burns/physical medicine rehabilitation
- Expansion of service lines
- Prominent national organizational presence
- Collaborative growth with CCH depts - surgery, anesthesia, radiology, medicine, peds, pathology etc.

Thank you.



COOK COUNTY
HEALTH